

We Claim:

1. A method for generating a signal rich in prosody information comprising:  
a first step including in said signal a plurality of phoneme symbols,  
a second step including in said signal a desired duration of each of said phoneme  
5 symbols,  
a third step including at least one target prosody parameter value within a duration  
for at least one of said phonemes at a time offset from the beginning of the duration of said  
phoneme that is greater than zero and less than the duration of said phoneme.

2. The method of claim 1 where said prosody parameter is pitch.

3. The method of claim 1 where said prosody parameter is energy.

4. The method of claim 1 where said third step includes target values for both pitch  
15 and energy.

5. The method of claim 1 where at least some of the phonemes have no prosody  
parameter targets specified for the beginning of the durations of said at least some of the  
phonemes.

6. The method of claim 1 where timing of said prosody parameter target  
specifications are expressed in terms of durations.

7. The method of claim 1 where timing of said prosody parameter target  
specifications are expressed in terms of time offsets from the beginning of durations of  
phonemes.

8. The method of claim 1 where at least some silence intervals have one or more  
prosody parameter target specifications.

9. The method of claim 1 where the format of said signal is:

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Dur_Enable
F0_Contour_Enable
Energy_Contour_Enable
Number_of_Phonemes
5 Phonemes_Symbols_length
  for (j=0;j<Phoneme_Symbols_Length;j++)
    Phoneme_Symbols
  for (j=0;j<Number_of_Phonemes;j++) {
    if(Dur_Enable)
10     Dur_each_Phoneme
    if (F0_Contour_Enable) {
      num_F0
      for (j=0; ,<num_F0;j++) {
        F0_Countour_Each_Phoneme
15     F0_Countour_Each_Phoneme_time
      }
    }
  }
  if (Energy_Contour_Enable)
20     Energy_Countour_Each_Phoneme
  }

```

*Sub 037* ~~10. The method of claim 9 where said signal also includes text specifications.~~

25 ~~11. The method of claim 1 where the format of said signal is:~~

Dur_Enable	1
F0_Contour_Enable	1
Energy_Contour_Enable	1
Number_of_Phonemes	10
30 Phonemes_Symbols_length	13
for (j=0;j<Phoneme_Symbols_Length;j++)	

Phoneme\_Symbols 8

for (j=0; j<Number\_of\_Phonemes; j++) {

    if(Dur\_Enable)

        Dur\_each\_Phoneme 12

5     if(F0\_Contour\_Enable) {

        num\_F0 5

        for (j=0; j<num\_F0; j++) {

            F0\_Countour\_Each\_Phoneme 8

            F0\_Countour\_Each\_Phoneme\_time 12

10          }

        }

    }

    if (Energy\_Contour\_Enable)

        Energy\_Countour\_Each\_Phoneme 24

15     }

where the numbers correspond to the number of bits.

**12. The method of claim 1 the format of said signal is:**

TTS\_Sentence\_Start\_Code 32

20   TTS\_Sentence\_ID 10

    Silence 1

    if (Silence)

        Silence\_Duration 12

25   else {

        if (Gender\_Enable)

            Gender 1

        if (Age\_Enable)

            Age 3

        if (!Video\_Enable & Speech\_Rate\_enable)

30          Speech\_Rate 4

            Length\_of\_Text 12

```

\ For (j=0; j<=Length_of_Text; j++)
    TTS_Text 8
    if (Prosody_Enable) {
        Dur_Enable 1
        F0_Contour_Enable 1
        Energy_Contour_Enable 1
        Number_of_Phonemes 10
        Phonemes_Symbols_length 13
        for (j=0; j<Phoneme_Symbols_Length; j++)
            Phoneme_Symbols 8
        for (j=0; j<Number_of_Phonemes; j++) {
            if (Dur_Enable)
                Dur_each_Phoneme 12
            if (F0_Contour_Enable) {
                num_F0 5
                for (j=0; j<num_F0; j++) {
                    F0_Countour_Each_Phoneme 8
                    F0_Countour_Each_Phoneme_time 12
                }
            }
        }
        if (Energy_Contour_Enable)
            Energy_Countour_Each_Phoneme 24
    }
    if (Video_Enable) {
        if (Dur_Enable) {
            Sentence_Duration 16
            Postion_in_Sentence 16
            Offset 10
        }
    }

```

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    }
    if(Lip_Shape_Enable) {
        Number_of_Lip_Shape 10
        for(j=0; j<Number_of_Lip_Shape; j++) {
5           If(Prosody_Enable) {
                If(Dur_Enable)
                    Lip_Shape_Time_in_Sentence 16
                Else
                    Lip_Shape_Phoneme_Number_in_Sentence 13
10          }
            else
                Lip_Shape_Letter_Number_in_Sentence 12
                Lip_Shape 8
15        }
    }

```

where the numbers correspond to the number of bits.

add  
a4